

SYNTHESIST WORKBOOK

PART 2:

Processing External Audio Signals

In the previous Arpeggio (October, 1976) we discussed the interfacing of the String Ensemble with the Axxe/Odyssey to obtain a polyphonic synthesizer system. In this article we will discuss the use of the External Audio Input jack on the back panels of the Axxe and the Odyssey. The ARP 2600 also has provisions for processing external signals, but accomplishes this in a slightly different manner.

What actually occurs in working with external signals is basically very simple. If we treat the incoming signal—whether it is a guitar, a voice, another keyboard (organ or piano) etc.—as we do the oscillator in the synthesizer, then the process of patching any external source becomes clear.

For example, let us process an electric guitar. First make your connection from the guitar to the External Audio Input jack on the back of the synthesizer. (A quick note here on this particular connection: most electric guitars do not require a pre-amp into the synthesizer to work properly; however, this may be a problem down the road, so if your results here experience volume problems, a pre-amp may be your solution).

After connecting the guitar and making sure your synthesizer is connected to your amplifier, move the VCF Frequency slider all the way up. Then open the VCA Gain slider until you can hear the guitar coming through the amplifier at the desired level. Now we are ready to begin processing.

While playing some sustain notes on the guitar, try moving the VCF slider about half-way down; play and listen; try using resonance. Now we can see how we are treating the guitar signal in much the same fashion as the oscillator. Having gained electronic access to the heart of the synthesizer, the voltage controlled filter (VCF), we

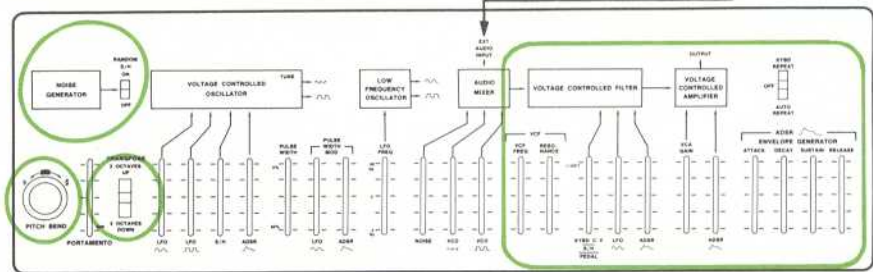
can now effectively "patch" the external source from that point on. Of course there are certain limitations. Since there is no control voltage used in this patch, the synthesizer itself cannot be controlled externally in this configuration. However, just by trying the filter settings from some of your favorite patches, or experimenting with some new effects, you will find that using your Axxe or Odyssey in this way will offer you many of the

effects you find used in studio recording.

Try using the LFO to modulate the filter, with plenty of resonance; try using the ADSR with Auto Repeat; try the external pedal controller (what a wah-wah pedal!). Try a microphone. Your voice through the synthesizer can be a trip.

Remember, anything producing an audio signal can be processed in this manner. Experiment!

SIGNAL ENTERS SYNTHESIZER CIRCUITRY HERE



When an External Audio Signal is applied to the Axxe, only those functions circled in the diagram above are available to you. In the Odyssey, both the Sample/Hold Mixer and the High Pass Filter would also be available. To utilize the Envelope Generators on either unit, you must have the Repeat switch set on the Auto Repeat mode.

PATCHWORKS

Generally, when one hears the word "synthesizer", sounds of bombs, wind, or photon torpedoes come to mind. Here is a sound that is very uncharacteristic of synthesizers; the "SAX SOUND".

1. Position controls as shown. (All sliders not illustrated should be down.)
2. Connect ARP foot pedal & depress toe.
3. When you wish to "bend" a note, move

pitch bend to 10 o'clock position. Play a note, simultaneously moving pitch bend to 12 o'clock and depressing heel on foot pedal. (This will take practice.)

4. You may move LFO FM slider into VCO 2 at this point.
5. The use of reverb is recommended.

To add realism, try to think of tunes or lines that use a real saxophone.

